DIABETES, OBESITY, AND OTHER INSULIN-RELATED DISEASES

SUMMARY

The National Cancer Institute's Urologic Oncology Branch seeks partners interested in collaborative research to co-develop small molecule epoxy-guaiane derivative englerin A and related compounds for diseases associated with insulin resistance.

REFERENCE NUMBER

E-042-2012

PRODUCT TYPE

- Therapeutics

KEYWORDS

- Diabetes
- Obesity
- Insulin Resistance
- Englerin A
- HSF1 Activation

COLLABORATION OPPORTUNITY

This invention is available for licensing.

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DESCRIPTION OF TECHNOLOGY

This technology claims methods for treating diseases or conditions associated with insulin resistance using the small molecule epoxy-guaiane derivative englerin A and related compounds. The compounds are claimed separately in a related NIH technology.

The inventors have shown that englerin A, a compound originally isolated from the Phyllanthus plant and previously identified as an anti-cancer agent, can also be used to treat insulin resistance. Insulin resistance is associated with reduced gene expression and production of heat shock protein 70 (HSP70). Using a mouse with tumor model, the inventors discovered that administration of englerin A decreases blood glucose levels by activating transcription of HSF1, thereby increasing the expression and secretion of HSP70. Thus, englerin A and related compounds represent potential drugs for the treatment of a

variety of conditions associated with insulin resistance.

POTENTIAL COMMERCIAL APPLICATIONS

Treatment of diseases or conditions associated with insulin resistance, such as type 2 diabetes, obesity, inflammation, metabolic syndrome, polycystic ovary disease, arteriosclerosis, non-alcoholic fatty liver disease, reproductive abnormality of a female, and growth abnormality.

COMPETITIVE ADVANTAGES

Use of small-molecule compounds targeting HSF1 represents a novel approach to the treatment of type 2 diabetes and other conditions caused by insulin resistance.

INVENTOR(S)

Leonard Neckers (NCI)

DEVELOPMENT STAGE

- Discovery (Lead Identification)

PATENT STATUS

- **U.S. Filed:** US Application No. 61/584,526
- **Foreign Filed:** PCT Application No. PCT/US13/20051

RELATED TECHNOLOGIES

- The compou

THERAPEUTIC AREA

- Hormonal Systems, Endocrine, and Metabolic Diseases